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NEW UNITED STATES UTILITY PATENT APPLICATION
under 37 C.F.R. 1.53(b)

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Atty. Docket No. 03493.87082
(AT&T 1999-0725)

Director of the U.S. Patent and Trademark Office
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Washington, D.C. 20231

Enclosed herewith is a new patent application and the following papers:

Inventors (or application identifier): Jared J. Helm; Michael A. Donkin; Ken C. Snyder

Title of Invention: SYSTEM AND METHOD FOR MANAGING DIAL PLATFORM CONFIGURATION

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1. Specification 26 pages (including specification, claims, abstract) / 30 claims (3 independent)
2. Declaration/Power of Attorney is:
 - attached in the regular manner.
 - NOT included, but deferred under 37 C.F.R. § 1.53(f).
3. 14 Distinct sheets of Formal Informal Drawings
4. Preliminary Amendment.
5. Information Disclosure Statement
 Form 1449
 A copy of each cited prior art reference
6. Assignment with Cover Sheet.
7. Priority is hereby claimed under 35 U.S.C. § 119(e) based upon the following application(s):

Country	Application Number	Date of Filing (day, month, year)

8. Priority document(s).
9. Statement Claiming Small Entity Status.
10. Microfiche Computer Program (Appendix).
11. Nucleotide and/or Amino Acid Sequence Submission.
 Computer Readable Copy.
 Paper Copy (identical to computer copy).
 Statement verifying identity of above copies.

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12. Calculation of Fees:

FEES FOR	EXCESS CLAIMS	FEE	AMOUNT DUE
Basic Filing Fee (37 C.F.R. § 1.16(a))			\$710.00
Total Claims in Excess of 20 (37 C.F.R. § 1.16(c))	10	18.00	\$180.00
Independent Claims in Excess of 3 (37 C.F.R. § 1.16(b))	0	80.00	\$0.00
Multiple Dependent Claims (37 C.F.R. § 1.16(d))	0	130.00	\$0.00
Subtotal - Filing Fee Due			\$890.00
	REDUCE BY (%) (\$)		
Reduction by 50%, if Small Entity (37 C.F.R. §§ 1.9, 1.27, 1.28)	0		\$0.00
TOTAL FILING FEE DUE			\$890.00
Assignment Recordation Fee (if applicable) (37 C.F.R. § 1.21(h))	0	40.00	\$0.00
GRAND TOTAL DUE			\$890.00

13. PAYMENT is:

included in the amount of the GRAND TOTAL by our enclosed check. A general authorization under 37 C.F.R. § 1.25(b), second sentence, is hereby given to credit or debit our Deposit Account No. 19-0733 for the instant filing and for any other fees during the pendency of this application under 37 C.F.R. §§ 1.16, 1.17 and 1.18.

not included, but deferred under 37 C.F.R. § 1.53(f).

14. All correspondence for the attached application should be directed to:

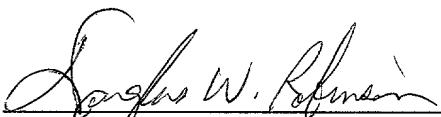
Mr. S. H. Dworetsky
AT&T Corp.
P.O. Box 4110
Middletown, New Jersey 07748

Telephone calls should be made to:

Thomas H. Jackson at 202-508-9119.

15. Other: _____

Date: 10/10/00

By: 
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THJ/DWR/pp

SYSTEM AND METHOD FOR MANAGING DIAL PLATFORM CONFIGURATION

Field of the Invention

5 The present invention relates to a dial platform configuration manager. More particularly, the present invention relates to a system and method for managing a dial platform so that individual chassis of the dial platform can be upgraded in an expedited fashion. The system and method
10 for managing a dial platform provides the capability of selecting different software for downloading to each chassis, as well as the capability to set various configurations and monitor queue settings. The system and method for managing a dial platform performs tests on each chassis to insure that
15 each chassis is accurate.

Background of the Invention

20 Modem chassis are used to support multiple cards. A modem chassis typically includes seventeen slots, each of which can accommodate a different configuration of card types. These card types include a Network Management Card (NMC), a Quad Modem Card that has four modems per card, a Hyper Density Modem Card (HDM) that has 24 modems plus the carrier per card,
25 a Hyper Access Router Card (HARC) that routes calls to the network, and a PRI/TI Card that supports two carriers.

30 Each modem chassis can have different combinations and numbers of some or all of the foregoing cards. As a result maintaining a single configuration for all the shelves network-wide is very difficult.

Due to the differing assortment of cards per chassis, maintaining a single configuration for all of the shelves network-wide was difficult.

Conventionally, technicians load the code for each 5 chassis on a chassis by chassis basis, by bringing up a view of each chassis and selecting the cards to be loaded. This is a time consuming process and required the attention of the technician for the duration of the load.

For each chassis, every setting that needed to be 10 changed was done by single Signaling Network Management Protocol (SNMP) sets, which are not entirely reliable. The process was very time consuming, and resource intensive. There could be as many as 3500+ sets to a chassis. The SNMP set method can take up to 45 minutes or more.

15

SUMMARY OF THE INVENTION

From the foregoing, there is a need for a system and 20 method for performing loading chassis code quickly and efficiently to a large number of chassis in a timely and cost effective manor.

The system and method for managing a dial platform of the present invention can load code (the operating system for the cards) and can configure the modem chassis, and 25 automates the process of loading different code to different cards, and determines how to configure a chassis based on information collected from the chassis prior to loading the code. The user interface is a web-based application that allows a technician to log into and choose a chassis, and 30 select the type of work to be performed. The choices made by the technicians are tracked in log files.

It is an object of the present invention to provide a system and method for managing a dial platform to upgrade code to multiple chassis quickly and efficiently.

Another object of the present invention is to 5 provide a system and method for managing a dial platform, which maintains a record of changes to each chassis.

Yet another object of the present invention is to provide a system and method for managing a dial platform that minimizes the downtime of the chassis while the chassis code 10 is upgraded.

Still another object of the present invention is to provide a system and method for managing a dial platform in which the chassis code is upgraded during a minimum usage period, and the minimum usage period is dependent upon the 15 time zone in which the chassis is located.

Another object of the present invention is to provide a system and method for managing a dial platform, which reduces the time required to introduce a new code release across the entire platform.

20

BRIEF DESCRIPTION OF THE DRAWINGS

These and other attributes of the present invention will be described with respect to the following drawings in 25 which:

FIG. 1 is flowchart of the user interface screens available in the system and method for managing a dial platform according to the present invention;

30 **FIGS. 2a and 2b** are a login screen and failure screen, respectively, for the flowchart shown in **FIG. 1**;

FIG. 3 is a main or opening screen for the flowchart shown in FIG. 1;

5 FIG. 4 is a site selection screen for the flowchart shown in FIG. 1;

10 FIG. 5 is an inventory screen for the flowchart shown in FIG. 1;

15 FIG. 6 is a list of chassis at each site for the upgrade process of the flowchart of FIG. 1;

15 FIG. 7 is a Code Type Selection screen for the upgrade process of the flowchart of FIG. 1;

20 FIG. 8 is a span type setting screen for the upgrade process of the flowchart of FIG. 1;

25 FIG. 9a-9e are Span Parameter Setting screens for each of the five span types for the upgrade process of the flowchart of FIG. 1;

25 FIG. 10 is a logging server screen for the upgrade process of the flowchart of FIG. 1;

30 FIG. 11 is a maintenance screen for the view queue process of the flowchart of Fig.1;

FIGS. 12a and 12b are two view active screens, for
30 when the dial platform configuration management system is

working on one chassis and no chassis, respectively, for the view active process of the flowchart of FIG. 1;

5 FIG. 13 is flow chart of the operation of the dial platform configuration management system with regard to the options presented in the main or opening screen according to the present invention; and

10 FIG. 14 is flow chart of the operation of the automated processes of the dial platform configuration management system according to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

15 A chassis consists of 17 slots that could contain a different configuration of card types such as the Network Management Card (NMC), Quad Modem Card (4 modems per card), Hyper Density Modem Card (HDM has 24 modems plus the carrier), Hyper Access Router Card, (HARC routes calls to the network), and PRI/T1 Cards (this supports 2 carriers).

20 Due to the differing assortment of cards per chassis, maintaining a single configuration for all of the shelves, network wide is difficult.

25 When a chassis is added to the network it is provided with a name, which is added to the Domain Name Service (DNS). The dial platform configuration management system does a nightly check for new chassis added to DNS. Until there is a name in DNS, the chassis is not considered manageable. If a new chassis is found, a discovery process is run.

The discovery process queries the chassis for the card types and the arrangement of those card types. It also checks for specific information such as settings that only apply to that chassis. The information is collected and stored
5 on the dial platform configuration management system machine as flat files, which are human readable files, to be referenced later.

Once a chassis has been established on the dial platform configuration management system, the chassis is
10 available to the technicians to start jobs on, such as updating the code to the cards or pushing a configuration to the chassis. The code for the cards is provided by 3Com, for example, and is needed for the card to power up in a usable state. The configuration of a card is the settings on the card
15 that can be changed to improve its performance. These settings are stored in a binary file on the NMC.

The technician can select to update the code on a chassis. The codes available for use are tested and approved by AT&T labs. They are released as a package so that older
20 versions of code are updated with the latest approved version. The dial platform configuration management system allows the technician to launch the job and move onto something else and periodically check on the status of the chassis until it is finished. If the code did not load to a specific card or cards
25 the technician is informed and maintenance can be performed.

The binary file is the main factor in the speed with which the dial platform configuration management system configures chassis. The binary file is the Non Volatile Ram (NVRAM) on the NMC card. This file has all the configurable
30 parameters stored in it and transfers across the network in about 2 minutes. The conventional SNMP set method could take

up to 45 minutes or more.

The binary file takes care of the bulk of the configuration. Not all the settings are controlled in this file. The uncontrolled settings are stored in the flat file
5 along with the chassis specific parameters. The flat file is then used as an input into another part of the dial platform configuration management system to configure the remaining sets not handled by the transfer of the binary file. As a result, the number of sets is reduced from 3500 or more to
10 around 150 or less. With such a low number of sets, it is possible to set the parameter and then verify that the parameter was set. The approximate time to configure a chassis is 12 minutes.

After a download and/or configuration job is
15 performed a log file of the job is stored on the machine to be viewed for reference. A checking function is run once a week for each chassis, or can be run by the technician when needed.

This checking function checks the code version of each card and the configurable parameters to verify the settings are
20 what they are suppose to be. The results of these checks are stored and used to create reports of the stability of the configuration of chassis across the network

The user interface for the dial platform configuration management system is all web based and requires
25 a log in to use the tools. This allows for tracking of what was done, when it was done, and who did it for each chassis. The web pages use a combination of perl, CGI, and Javascript.

With the use of perl and CGI the web pages require very minimal maintenance. The web pages are updated as the
30 directories on the machine are updated.

The dial platform configuration management system is designed to maintain itself. The amount of manpower needed to maintain the machine and application is thus reduced.

The system and method for managing a dial platform of the present invention can be used to deploy major software releases, new TCM chassis configurations, and span type changes. The system and method for managing a dial platform is an application that can run on a Unix machine, for example.

He preferred embodiment is designed for a Hewlett-Packard Unix machine (HPUX), but is portable to any Unix environment. The size of the machine is not an issue because the system and method for managing a dial platform if configured correctly can be slaved out to multiple smaller machines. With modifications the system and method for managing a dial platform could effectively run on multiple boxes with different operating systems. Presently, the system and method for managing a dial platform runs on an HP R-class Unix system. This system currently supports all 2500+ modem chassis for the Dial platform and all 180+ modem chassis for Voice over IP. The machine still has room for growth.

Referring to Fig. 1, a flowchart of the user interface screens available in the system and method for managing a dial platform according to the present invention is shown. The user is first presented with a login screen 30 shown in Fig. 2a. After entering a user ID and a password, the user is presented with either a failure screen 32, shown in Fig. 2b, or the main or opening screen 34, shown in Figs. 1 and 3. The failure screen 32 is presented when the user ID and/or password are invalid.

The main or opening screen 34 allows the user to choose what activity is to take place. The activities include

Download and Configuration; Configuration; Download; Upgrade; Upgrade HARC; View Queue: View Active; and Edit Queue. In Fig. 1, each of these activities is illustrated as a line leading out from the main screen 34.

5 The Download and Configure option loads software, sets configurations and trap setting based on settings already in a chassis. The Configuration option sets configurations and trap setting as based on settings already in a chassis. The Download option will download software only. The upgrade
10 option loads software, modifies span settings and reconfigures the chassis. The upgrade HARC option loads software, sets configurations using Expect script, and sets trap settings. The View Queue/View Active/Edit Queue options monitor/modify the queue for scheduled work. The trap settings are designed
15 to record the state of a card in the event a task for a card or cards is not completed.

Following line 40 in Fig. 1, once the user has selected the Download and Configure option, the user is presented with the site selection screen 42, shown in detail in Fig. 4. The site selection screen 42 is created from the directory of sites maintained on the host server. The user must check boxes to each site that is to be modified. After the sites are selected the submit button must be selected. After selecting the sites, the user is presented with the chassis selection screen 44. If the user hits the submit button from the site selection screen 42 without selecting a site an error screen 46 is displayed indicating that no site was selected.

After the site locations are selected, the dial
30 platform configuration management system provides a list of chassis at each site in the Inventory screen 48. The number

of sites selected in the site selection screen 42 is also displayed. The user can select individual chassis or all of the chassis. The user can then choose to go forward to the Queue Question screen 50, back to the site selection screen 5 42, or to the opening screen 34.

When the name of a chassis is selected on the chassis selection screen 46, the dial platform configuration management system retrieves the chassis inventory and displays it. As an example Fig. 5 shows the inventory screen 48 for 10 chassis nwola02, which is located in New Orleans (nwola), on 2nd chassis (02). In the example shown in Fig. 5, the full identifier is nwola02rs17mr, which includes the additional information indicating that it is the Roboitics chassis (rs) and the location of the NMC Card in slot 17 (17mr), all 15 information about the chassis is received through the NMC Card.

In the queue question screen 50, the user is given three options if the number of chassis(s) selected is less than five. First the user can choose "yes" to place the 20 chassis(s) in the queue for action during the maintenance window time at the site location. After selecting "yes" a time zone selection map screen 54 and queue list 56 are presented to indicate what time zone the selected chassis are in. By selecting "no" the chassis(s) selected will be placed 25 in the queue for action, to start within five minutes. If more than five chassis are selected in the chassis selection screen 46, the queue question screen is bypassed. The "no" selection also begins the download and configuration in screen 58. The third option is the "go back" button to return to the 30 chassis selection screen 46.

If a secondary activity for a chassis already in the

queue is attempted, an error message screen 52 appears to inform the user that the queue must be edited. The error message screen 52 gives the user two options. First the user can remove the previously scheduled chassis(s) from the queue.

5 Second, the user can leave the previously scheduled chassis in the queue with the earlier requested changes to run.

At queue time, the dial platform configuration management system will read the unique trunk settings on the chassis; obtain the trap destinations; the NMC logging addresses, and EV addresses from the EV database; download the currently released software to each card, one card type at a time; reset the CODE II type cards such as the HDSPs and the HARCs; restore the default settings on each card; configure all cards and set trap destinations; save to NVRAM for each card; and reset each card type. CODE II type cards are cards that can be loaded with code without interrupting services, and the code will not take affect until the cards is rebooted.

Line 60 in Fig. 1 shows the screens presented for the both of the download or configuration options. The opening screen 34, site selection screen 42, chassis selection screen 46, queue question screens open sequentially in the same manner as described above for the Download and Configure option.

For the Download option, the dial platform configuration management system downloads the currently released software to each card, one card type at a time, and then resets each card type.

For the Configuration option, the dial platform configuration management system reads the unique trunk settings on the chassis; obtains the trap destinations; the NMC logging addresses, and EV addresses from the EV database;

resets the CODE II type cards such as the HDSPs and the HARCs; restores the default settings on each card; configures all cards and set trap destinations; saves to NVRAM for each card; and resets each card type.

5 Line 70 depicts the screens for the Upgrade option.
In the upgrade process the user must select the site and chassis to be modified, select if or which software code version should be loaded, select the span type and configuration parameters for each span chassis, supply the
10 logging addresses and EV pool address, and submit the work to the queue.

The site selection screen 42 is the same as the Download and Configure option. After the site location is selected, the dial platform configuration management system
15 provides a list 72 of chassis at each site, as shown in Fig. 6. The number of sites selected in the site selection screen is displayed at the top. At this point the user has three options. First, the user can select the chassis name, which will cause a Code Type Selection screen to appear. Second,
20 the user can choose to return to the beginning, which causes the opening screen 34 to appear. Third, the user can choose to return to the site selection screen 42.

The Code Type Selection screen 80 is shown in Fig. 7, and allows the user to select the code level to be loaded
25 onto the chassis. A default selection will load the most recently released version onto the chassis. The user must select the appropriate span type for each span. The selection will cause different Span Parameter Setting screens to appear. The span settings must be set correctly before placing work in
30 the queue. Fig. 8 illustrates the span type setting screen 82. Each span type requires different parameter settings,

which must be manually set. Figs. 9a -9e are Span Parameter Setting screens 84a-84e for each of the five span types. Fig. 9a shows a span parameter setting screen 84a for a quad T1 span type. Fig. 9b shows a span parameter setting screen 84b for a quad E1 span type. Fig. 9c shows a span parameter setting screen 84c for a quad PRI span type. Fig. 9d shows a span parameter setting screen 84d for a HDM T1 span type. Fig. 9e shows a span parameter setting screen 84e for a HDM PRI span type.

After entering the span information for each of the spans, the user is presented with the logging server screen 90 shown in Fig. 10. The user enters the logging server addresses and the pool address associated with the chassis in the logging server screen 90. The user also selects the priority of the upgrade using a scale of 1 to 5, with 1 being the highest priority. After the user has submitted the foregoing information, the dial platform configuration management system will assign the work the chosen priority and place the task in the queue. An upgrade confirmation screen 92 is then displayed, and is shown in Fig. 11. From the upgrade confirmation screen the user can choose another chassis to configure, or to return to the opening screen 34.

Line 100 in Fig. 1 represents the HARC upgrade. As was the case for the download and configure process, the user must move through the site selection screen 42 and the chassis selection screen 46 to select the site(s) and chassis(s) to be modified. The user then sees the queue question screen 50 to enter the selected sites and chassis into the queue.

At queue time the dial platform configuration management system will load the HARC code with the most recent released version of the code, run the expect configuration

scripts, set the trap settings for the HARC and save the settings to the NMC chassis RAM. The HARC card is then reset.

Line 110 in Fig. 1 represents the screens displayed when a user selects the View queue option from the opening screen 34. The view queue option allows the user to see the queue list for each time zone in the USA. When the user selects the view queue option from the opening screen 34, the system for managing the dial platform displays the time zone map screen 120. The six time zones for the USA are displayed in the time zone map screen 120 along with a time zone clock.

By selecting any of the time zones, the user can obtain a list of the chassis for that time zoned queued for work and the time the work is to begin, all of which is displayed in the maintenance screen 122 shown in Fig. 11.

The dial platform configuration management system will list the chassis that are currently being worked on when the user selects the view active option from the opening screen 34 as shown in Fig. 1 by line 126. Figs. 12a and 12b illustrate two view active screens 122, for when the dial platform configuration management system is working on one chassis and no chassis, respectively.

The last option from screen 34 is the edit queue option and is illustrated by the line 130 in Fig. 1. Through the edit queue option, the user can remove chassis from the queue using the queue edit finished list screen 132.

Referring to Fig. 13, a flowchart of the operation of the dial platform configuration management system with regard to the options presented in the main or opening screen is illustrated. The web interface is the same as the opening screen 34 in Fig. 1. From the web interface 34, the user can select any of the six options, namely download and configure

200, configure 202, download 204, edit queue 206, view queue 208 and view history 210.

For download and configure 200, configure 202, and download 204 the next step is to choose or select the sites to be worked on in step 212. After the user has selected a site in step 212, the user then selects the chassis to be worked on in step 214. From the chassis selection step 214, the user can view the information for that chassis in step 216 or add the selections to the queue in either steps 230 or 232, as explained below. After viewing the chassis information in step 216, the user will return to the chassis selection step 214.

From the chassis selection step 214, the selected shelves are added to the queue depending on the number of shelves selected and whether the shelves are to be worked on during the maintenance window as outline below. In step 218, a determination is made as to the number of shelves selected. If the number of shelves is more than five, then the selections are queued with a priority of 3 in step 230. In step 220 a determination is made as to whether the work, to be done on the shelves is to be performed during the maintenance window. If the work is to be done during the maintenance window, then the selections are once again queued with a priority of 3 in step 230. If the work is not done during the maintenance window, then the selections are queued with a priority of 1 in step 232.

If the user chooses the edit queue option 206, then the user proceeds to the choose Chassis step 234. The user then can remove selections from the queue in step 236. If the view queue option 208 is selected the user then enters the choose time zone step 237 which will then lead to the view

queue by time zone step 238. Finally, the view history option 210 leads the user to the choose history file step 240, which in turn leads to the view history file step 242.

Referring to Fig. 14, a flow chart of the operation 5 of the automated processes of the dial platform configuration management system is shown. The main program 250 send and receive information from the queue 252. This occurs when any of the six options are followed to their end without being aborted. The view queue, view active and edit queue options 10 all involve the interaction with the queue.

For the download option 204, the configure option 202, and the download and configure option 200, automated processes follow different paths. For the download option 204, the system first collects the key settings in step 254 and saves the key settings in step 256. The system then commandeers the selected modems so that the selected modems are unavailable to all other elements of the network in step 258. In step 260 a determination of the types of card selected is made. Code is then loaded to the specific cards, 15 in step 262. The loaded code is checked twice in step 264. If an error in the loaded code is detected in step 264, the system repeats step 262. The modems are then released or designated un-busy in step 266. The results are archived in step 268.

Similar to the download option 204, for the 25 configure option 202, the system first collects the key settings in step 254 and saves the key settings in step 256. The system then commandeers the selected modems so that the selected modems appear to be busy to all other elements of the 30 network in step 258. In step 270 the system restores the chassis to the default settings. Next, the system determines

the configuration type in step 272, and then loads the configuration file in step 274. Next, the system sets the individual settings in step 276. The key settings that were saved in step 256 are utilized in step 276. The configuration 5 is then saved to the chassis in step 278, and the results are archived in step 280.

The last option is the download and configure option 200, which follows the same steps 254-264 as the download option 204. After checking the loaded code twice in step 264 10 the system follows steps 270-280 that were set forth above for the configure option 202.

The work to be done on the chassis is given a priority level in the queue. Every five minutes the dial platform configuration management system will begin the tasks 15 in the queue having a priority 1 level up to a predetermined limit. At the beginning of the maintenance window for each time zone, the dial platform configuration management system starts the highest priorities first, i.e., the lowest priority numbers. Priority 1 is the highest priority, and all tasks 20 assigned the level of priority will take precedence over lower priorities. Tasks with a level 1 priority are the only tasks that are performed during and outside of the maintenance window. Priority 2 level tasks take precedence over priority 25 3 level tasks. Once a task reaches priority 2 status, it remains there until completed or is removed from the queue. Priority 3 tasks take precedence over priority 4 tasks. Priority 4 tasks take precedence over priority 5 tasks. After a task has remained at priority 3, 4 or 5 for three days, the dial platform configuration management system advances the 30 task to the next highest level, i.e., 2, 3, or 4, respectively.

When five or less chassis are placed in the queue at one time, that action is given a priority 1 level unless specified to be run during the maintenance window in which case a priority 3 level is given. For six to 100 chassis 5 placed in the queue at one time a priority three is assigned.

Finally, for more than 100 chassis placed in the queue at one time, a priority 5 is assigned.

The dial platform configuration management system is designed to perform all non-priority 1 tasks, and some 10 priority 1 tasks, during a maintenance window. The maintenance window is the period of time where there is the minimum amount of use of the chassis in that time zone. It has been determined that the chassis are used the least between the hours of 3AM and 5AM, and this is therefore the 15 maintenance window for each time zone.

Having described several embodiments of the dial platform configuration management system in accordance with the present invention, it is believed that other modifications, variations and changes will be suggested to 20 those skilled in the art in view of the description set forth above. It is therefore to be understood that all such variations, modifications and changes are believed to fall within the scope of the invention as defined in the appended claims.

WHAT IS CLAIMED IS:

1. A method of dial platform configuration management, in which said dial platform comprises at multiple 5 chassis, each of said chassis having a plurality of slots containing a plurality cards, said cards having at least one modem thereon, comprising the steps of:

selecting an action including downloading code to at least one of said chassis, configuring said at least one of 10 said chassis, and downloading and configuring said at least one of said chassis;

choosing a site at which said at least one chassis is located,;

selecting at least one chassis at said site;

15 placing said at least one chassis at said site in a queue for subsequent execution of said selected action; and executing said selected action.

2. A method of dial platform configuration management as recited in claim 1, wherein said step of selecting an action further comprises editing said queue to change the order in which said selected actions are performed.

25 3. A method of dial platform configuration management as recited in claim 1, wherein said step of selecting an action further comprises viewing said queue to review the order in which said selected actions are performed.

30 4. A method of dial platform configuration management as recited in claim 1, wherein said step of selecting an action further comprises viewing active items in

said queue to review the items actively being executed in said queue.

5. A method of dial platform configuration
management as recited in claim 1, wherein said step of
selecting an action further comprises upgrading software code
for at least one chassis.

6. A method of dial platform configuration
management as recited in claim 5, wherein when said upgrading
step is selected in said action selection step, further
comprising the step of selecting a software version to
upgrade.

15 7. A method of dial platform configuration
management as recited in claim 6, further comprising the step
of selecting a span type for said at least one chassis.

20 8. A method of dial platform configuration
management as recited in claim 7, further comprising the step
of selecting a span type for said at least one chassis.

25 9. A method of dial platform configuration
management as recited in claim 8, further comprising the step
of selecting logging server addresses for said at least one
chassis.

30 10. A method of dial platform configuration
management as recited in claim 1, wherein said step of
selecting an action further comprises upgrading software code
for at least one HARC.

11. A method of dial platform configuration management as recited in claim 3, wherein said step of viewing said queue comprises the step of selecting a queue according
5 to a time zone.

12. A method of dial platform configuration management as recited in claim 1, further comprising the step of determining a priority for said selected action.

10

13. A method of dial platform configuration management as recited in claim 12, wherein said priority is selected by a user.

15

14. A method of dial platform configuration management as recited in claim 12, wherein said priority is determined by how many chassis are selected.

20

15. A method of dial platform configuration management as recited in claim 12, wherein said priority is determined by whether said selected action is to be performed in a maintenance window during which platform use is at a minimum.

25

16. A method of dial platform configuration management as recited in claim 14, wherein if more than five chassis are selected the selected action is given an average priority.

30

17. A method of dial platform configuration management as recited in claim 14, wherein if five or less

chassis are selected and the selected activity is not to be performed in a maintenance window during which platform use is at a minimum, said selected action is given a highest priority.

5

18. A method of dial platform configuration management, in which said dial platform comprises at multiple chassis, each of said chassis having a plurality of slots containing a plurality cards, said cards having at least one 10 modem thereon, comprising the steps of:

selecting an action including downloading code to at least one of said chassis, to configuring said at least one of said chassis, and to downloading and configuring said at least one of said chassis;

15 choosing a site at which said at least one chassis is located,;

selecting at least one chassis at said site;

placing said at least one chassis at said site in a queue for subsequent execution of said selected action;

20 determining if said selected action is to be performed in a maintenance window during which platform use is at a minimum; and

executing said selected action.

25 19. A system for managing the configuration of a dial platform comprising:

multiple chassis, each of said chassis having a plurality of slots containing a plurality cards, said cards having at least one modem thereon;

30 a server through which an action can be selected, said actions including downloading code to at least one of

10 said chassis, configuring said at least one of said chassis, and to downloading and configuring said at least one of said chassis;

15 said server maintaining a queue of said actions to be performed at sites where said multiple chassis are located throughout said platform;

20 said queue having the ability to initiate said selected actions during a maintenance window during which use of said platform is at a minimum.

10

20. A system for managing the configuration of a dial platform as recited in claim 19, wherein said actions further comprise editing said queue to change an order in which said selected actions are performed.

15

21. A system for managing the configuration of a dial platform as recited in claim 19, wherein said actions further comprise viewing said queue to review an order in which said selected actions are performed.

20

22. A system for managing the configuration of a dial platform as recited in claim 19, wherein said actions further comprise viewing active items in said queue to review items actively being executed in said queue.

25

23. A system for managing the configuration of a dial platform as recited in claim 19, wherein said actions further comprise upgrading software code for at least one of said multiple chassis.

30

24. A system for managing the configuration of a dial platform as recited in claim 19, wherein said step of selecting an action further comprises upgrading software code for at least one HARC.

5

25. A system for managing the configuration of a dial platform as recited in claim 19, wherein said selected actions are prioritized.

10 26. A system for managing the configuration of a dial platform as recited in claim 25, wherein said priority is selected by a user.

15 27. A system for managing the configuration of a dial platform as recited in claim 25, wherein said priority is determined based upon the number of chassis selected for each of said selected actions.

20 28. A system for managing the configuration of a dial platform as recited in claim 25, wherein said priority is determined by whether said selected actions are to be performed in a maintenance window during which platform use is at a minimum.

25 29. A system for managing the configuration of a dial platform as recited in claim 28, wherein if more than five chassis are selected for a selected action, said selected action is given an average priority.

30 30. A system for managing the configuration of a dial platform as recited in claim 28, wherein if five or less

chassis are selected and the selected activity is not to be performed in a maintenance window during which platform use is at a minimum, said selected action is given a highest priority.

ABSTRACT OF THE DISCLOSURE

A system and method for managing a configuration of a dial platform. The operating system for the cards can be loaded and the modem chassis can be configured. The process of loading different code to different cards is automated, and the chassis is configured based on information collected from the chassis prior to loading the code. The user interface allows a technician to log into and choose a chassis, and select the type of work to be performed. The choices made by the technicians are tracked. The work is preferably performed during a maintenance window to minimize the impact to the network.

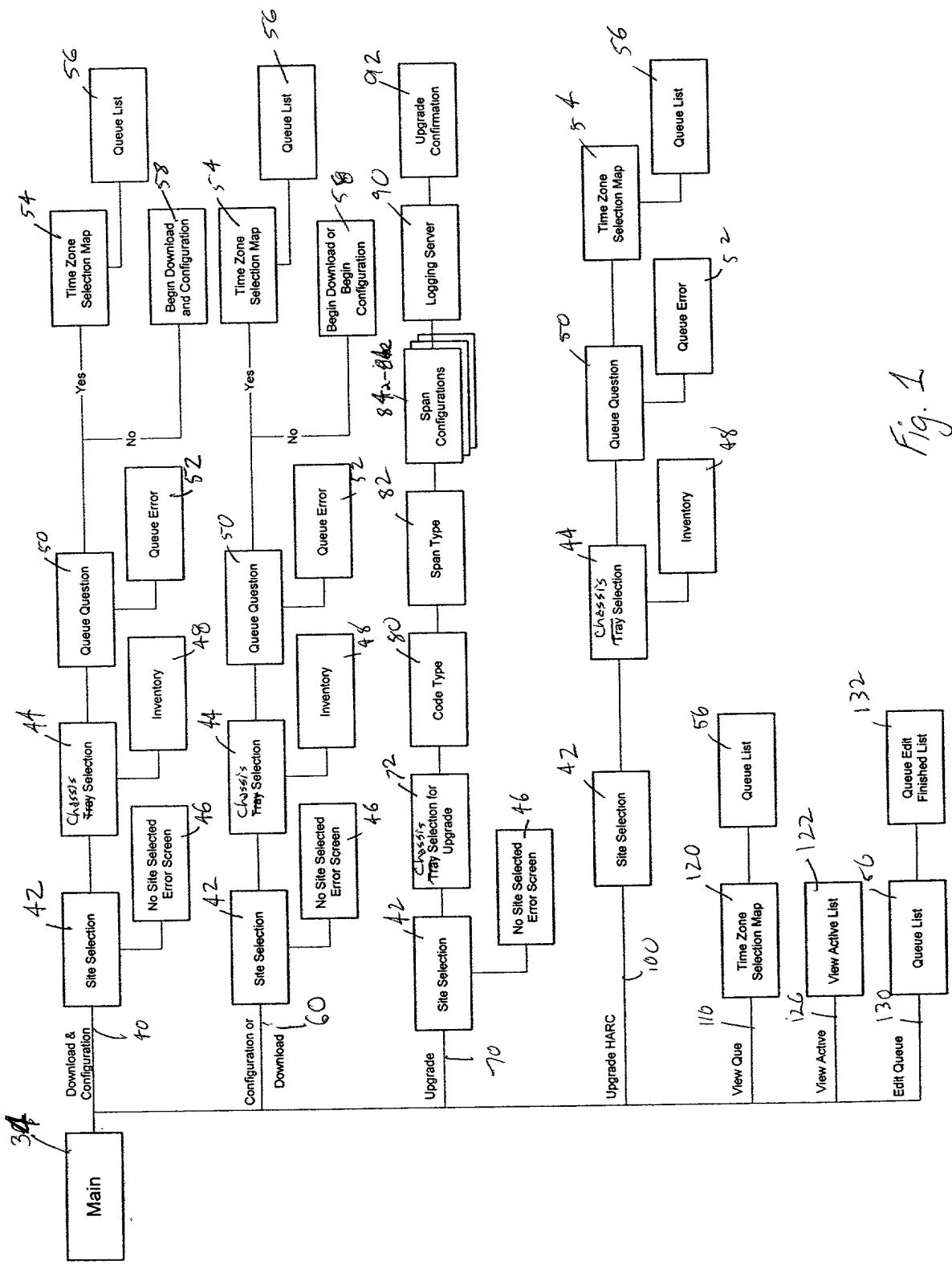


Fig. 1

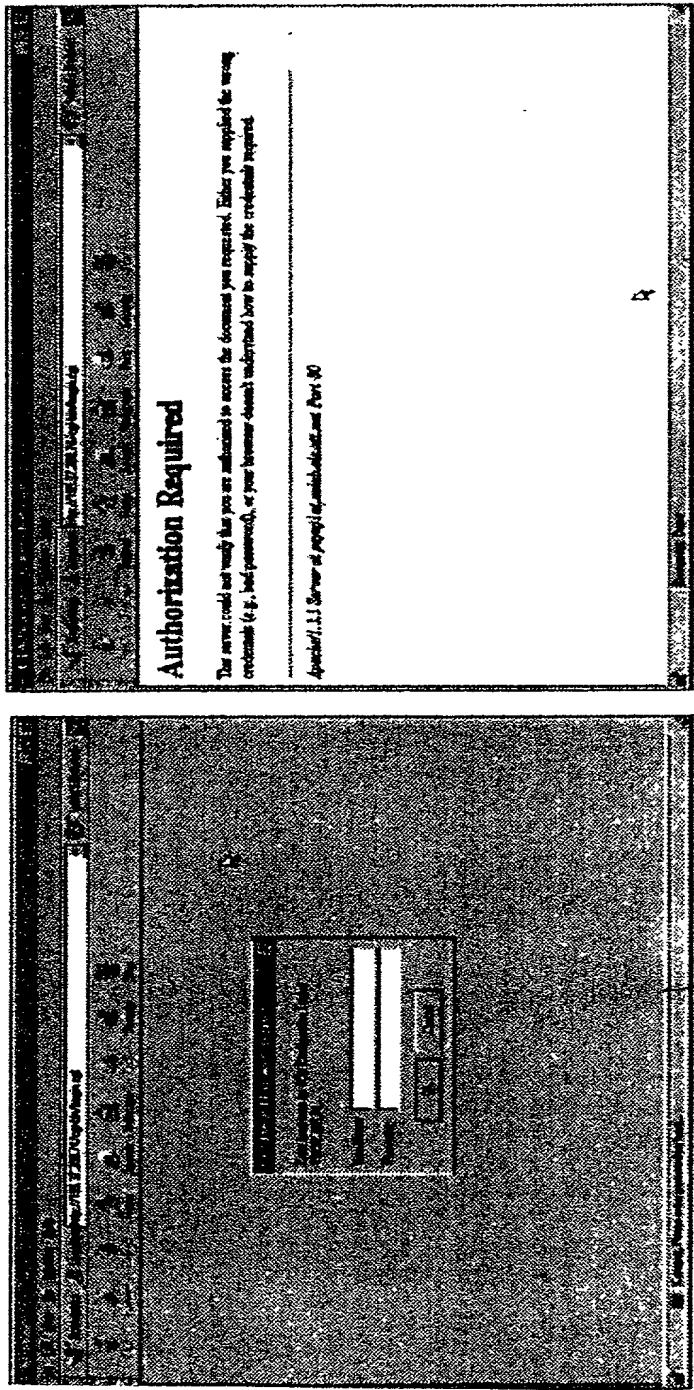
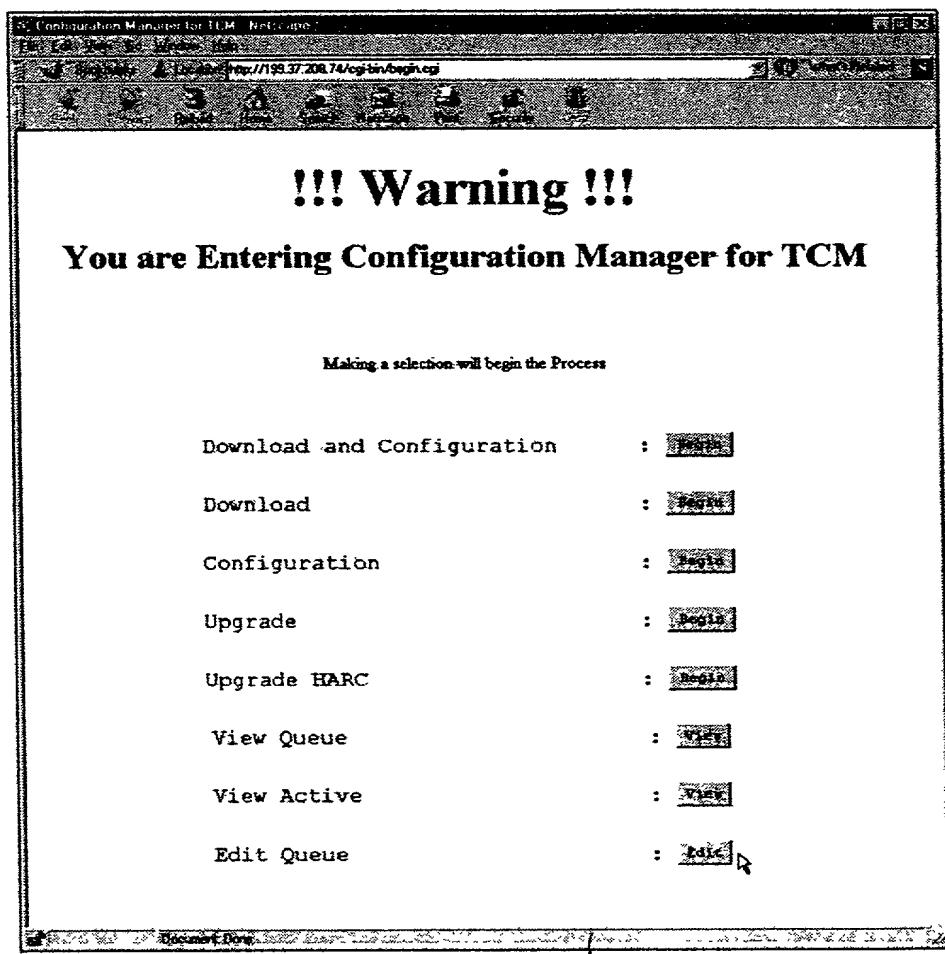


Fig. 2a
30

Fig. 2b
32



34

Fig. 3

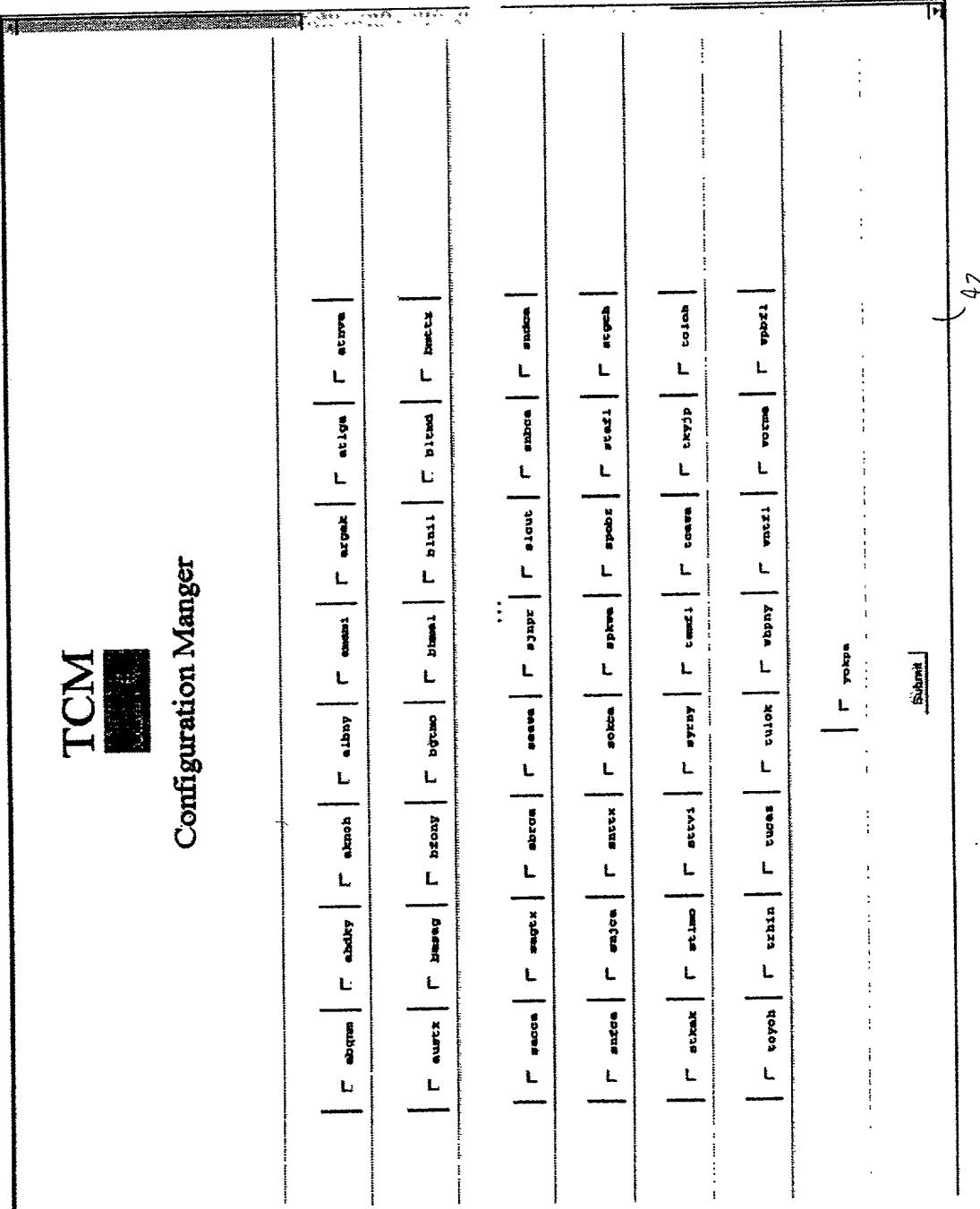


Fig. 4

You Have Selected 1 Site

mwola

Configuration Type = evm

Logging Server No. 1 = 121.229.236.142
Logging Server No. 2 = 121.229.236.143

EVM CARD TYPE SOFTWARE

<input type="checkbox"/> <u>mwola01rs17mr</u>	ESR	3.0.07
<input type="checkbox"/> <u>mwola02rs17mr</u>	ESR	3.0.07
<input type="checkbox"/> <u>mwola03rs17mr</u>	ESR	3.0.07
<input type="checkbox"/> <u>mwola04rs17mr</u>	ESR	3.0.07
<input type="checkbox"/> <u>mwola05rs17mr</u>	ESR	3.0.07
<input type="checkbox"/> <u>mwola06rs17mr</u>	ESR	3.0.07
<input type="checkbox"/> <u>mwola07rs17mr</u>	ESR	3.0.07
<input type="checkbox"/> <u>mwola08rs17mr</u>	ESR	3.0.07
<input type="checkbox"/> <u>mwola09rs17mr</u>	ESR	3.0.07
<input type="checkbox"/> <u>mwola10rs17mr</u> , evm - Upgrade Required	ESR	3.0.07
<input type="checkbox"/> <u>mwola11rs17mr</u> , evm - Upgrade Required	ESR	3.0.07
<input type="checkbox"/> <u>mwola12rs17mr</u> , evm - Upgrade Required	ESR	3.0.07
<input type="checkbox"/> <u>mwola13rs17mr</u> , evm - Upgrade Required	ESR	3.0.07
<input type="checkbox"/> <u>mwola14rs17mr</u> , evm - Upgrade Required	ESR	3.0.07
<input type="checkbox"/> <u>mwola15rs17mr</u> , evm - Upgrade Required	ESR	3.0.07
<input type="checkbox"/> <u>mwola16rs17mr</u> , evm - Upgrade Required	ESR	3.0.07
<input type="checkbox"/> <u>mwola17rs17mr</u> , evm - Upgrade Required	ESR	3.0.07
<input type="checkbox"/> <u>mwola18rs17mr</u> , evm - Upgrade Required	ESR	3.0.07
<input type="checkbox"/> <u>mwola19rs17mr</u> , evm - Upgrade Required	ESR	3.0.07
<input type="checkbox"/> <u>mwola20rs17mr</u> , evm - Upgrade Required	ESR	3.0.07

48

Fig. 5

You Have Selected 2 Sites

psynj

psynj17rs17mr.nelab.eis.att.net
psynj18rs17mr.nelab.eis.att.net
psynj19rs17mr.nelab.eis.att.net
psynj20rs17mr.nelab.eis.att.net
psynj21rs17mr.nelab.eis.att.net

stlmo

stlmo01rs17mr
stlmo02rs17mr
stlmo03rs17mr
stlmo04rs17mr
stlmo05rs17mr
stlmo06rs17mr
stlmo07rs17mr
stlmo08rs17mr
stlmo09rs17mr
stlmo10rs17mr
stlmo11rs17mr
stlmo12rs17mr
stlmo13rs17mr

72

Fig. 6

**Upgrade Selections For
psynj18rs17mr.netlab.cls.att.net**

CODE TYPE :

3.1.2B default none

80

Fig. 7

SPAN TYPE :

Slot 1 Span 1 :	<u>channelT1</u>	<u>c1</u>	<u>pri</u>
Slot 1 Span 2 :	<u>channelT1</u>	<u>c1</u>	<u>pri</u>
Slot 14 :	<u>channelT1</u>	<u>pri</u>	
Slot 15 :	<u>channelT1</u>	<u>pri</u>	

82

Fig. 8

Quad T1 Configuration Menu

CONFIGURATION PARAMETERS :

Slot 1 Available Settings for Span 1

Acknowledgement Wink: disabled

Dial-in/Dial-out Trunk Type: standardT1

Dial-in Address: noAddress

Framing Mode: Other

Line Coding Options: other

Automatic Busy Out: disabled

Dial-in/Dial-out Trunk Signal Start: wink

Pressing OK will change the configuration file. 84a

Fig. 9a

Quad E1 Configuration Menu

CONFIGURATION PARAMETERS :

Slot 1 Available Settings for Span 1

Framing Mode: Other

Line Coding Options: other

Primary Switch Type Set: pri3w4ESS

Call Proceeding/Connect on SETUP Message: off

Pressing OK will change the configuration file. 84b

Fig. 9b

Quad PRI Configuration Menu

CONFIGURATION PARAMETERS :

Slot 1 Available Settings for Span 1

Framing Mode: Other

Line Coding Options: other

Primary Switch Type Set: pri3w4ESS

Call Proceeding/Connect on SETUP Message: off

Pressing OK will change the configuration file. 84c

Fig 9c

HDM T1 Configuration Menu

8td

CONFIGURATION PARAMETERS :

Slot 14 Available Settings

Signal Mode:	none
Ack Wink On Dial In Address Info Received:	disabled
Dial In/Out Trunk Start Signal Type:	wink
Dial In/Out Trunk Type:	dmrMTPell
Line Coding Options:	dmxLB23
Dial In Address:	noAddress
Framing Mode:	Other

Pressing OK will change the configuration file. **OK**

Fig. 9d

HDM PRI Configuration Menu

8te

CONFIGURATION PARAMETERS :

Slot 14 Available Settings

Signal Mode:	none
Line Coding Options:	dmxLB23
Primary Switch Type:	pri3wECSS
Dial In Address:	noAddress
Framing Mode:	Other

Pressing OK will change the configuration file. **OK**

Continued on next page

Fig. 9e

**Final Information Needed To Complete
psynj18rs17mr.netlab.eis.att.net**

Logging Server No. 1: **199.37.199.61**

Logging Server No. 2: **199.37.199.62**

Ey Pool Address For psynj18rs16rt.netlab.eis.att.net : **12.71.249.224**

Set Priority

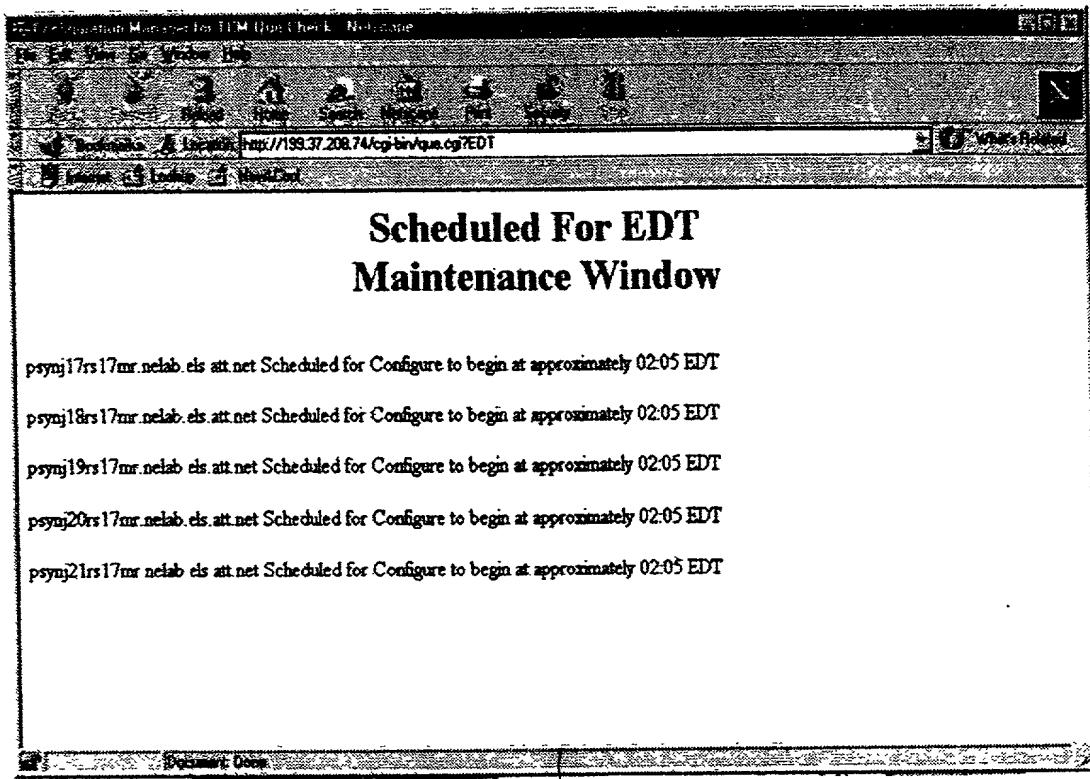
c 1 c 2 c 3 c 4 c 5

**When Submit button is Pushed Configuration file
will be put in place!**

Submit

90

Fig. 10



122

Fig. 11

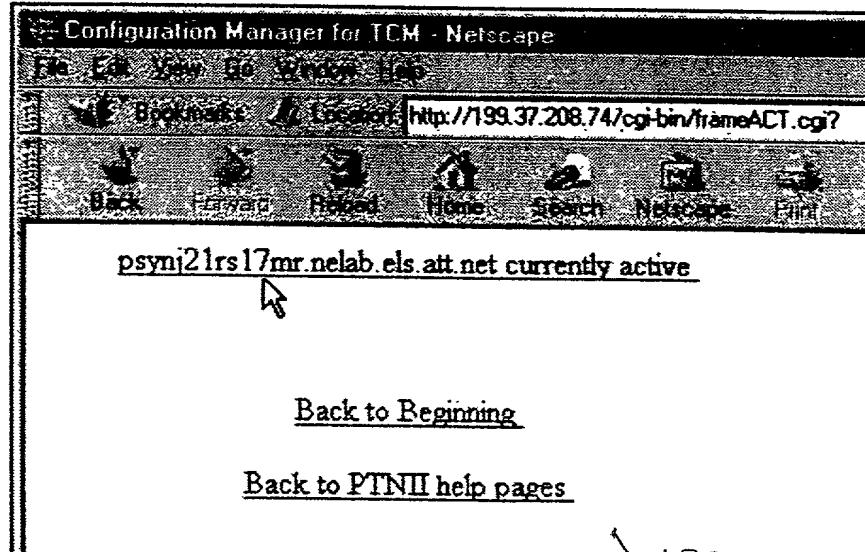


Fig. 12a

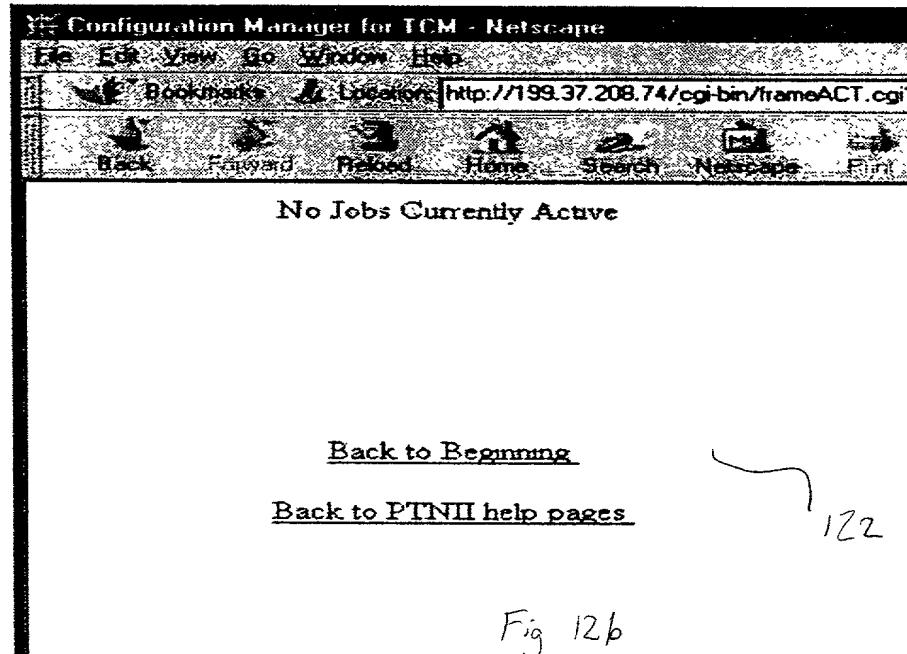
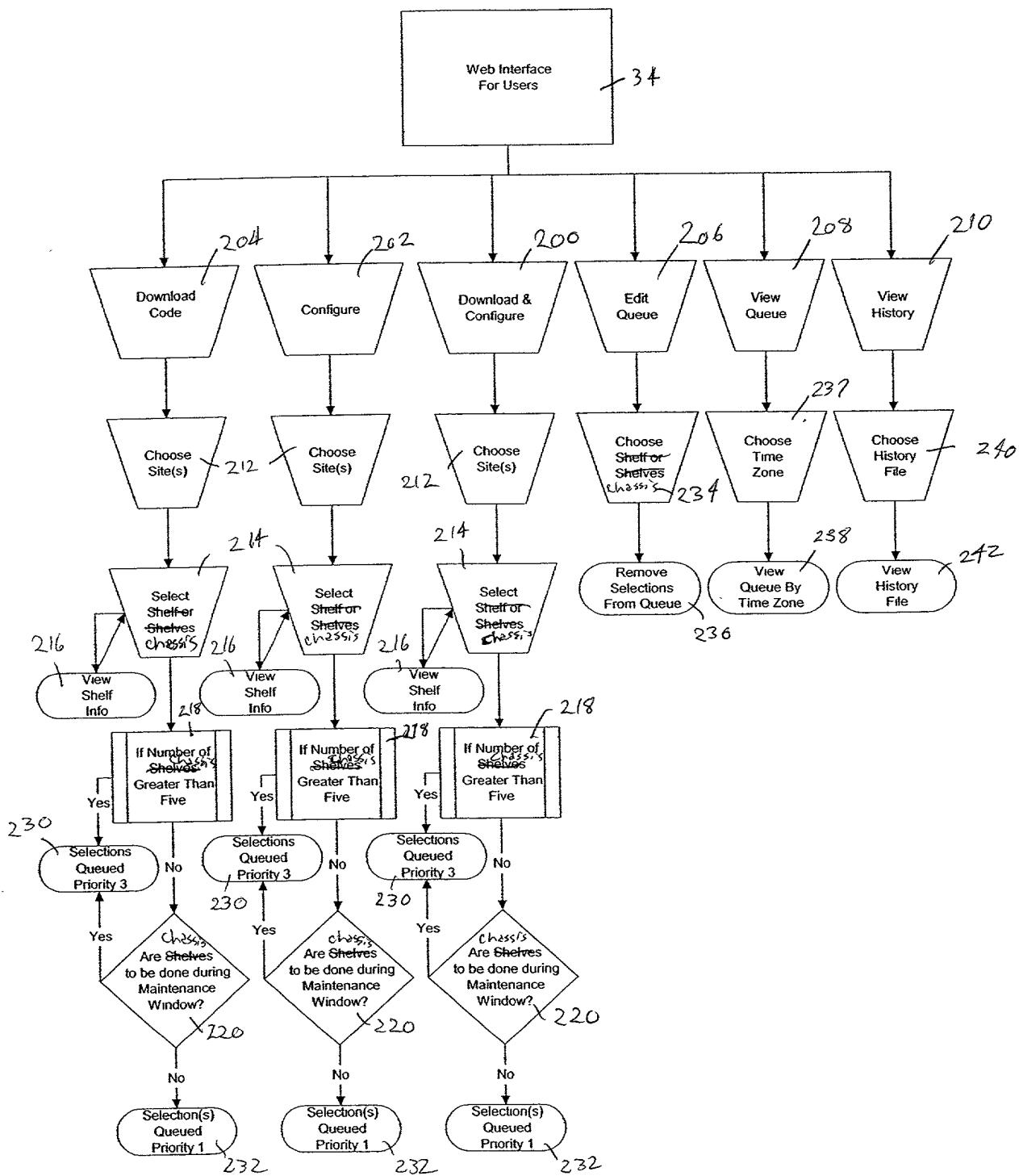


Fig 12b



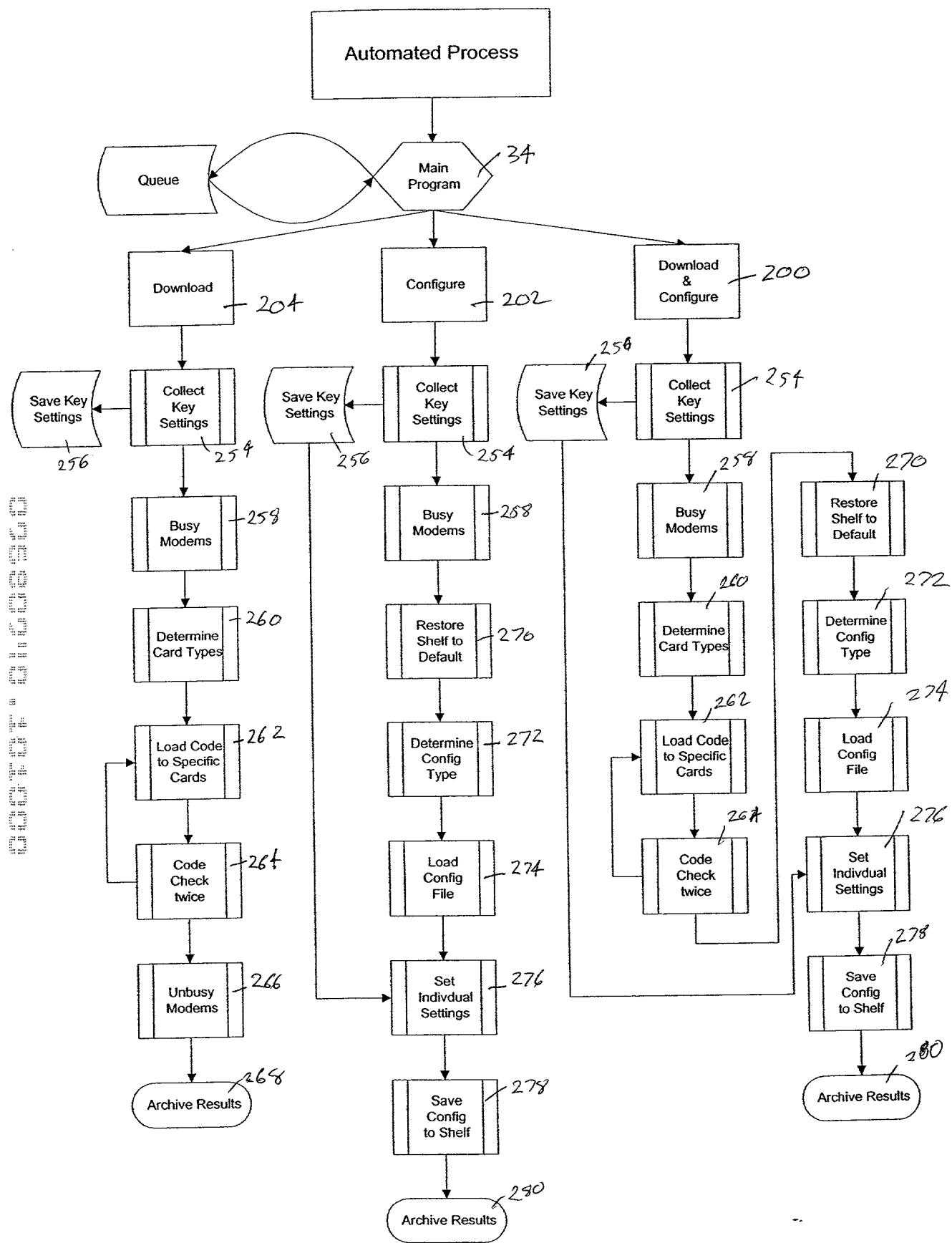


Fig. 13